

Installation and operating instructions

Weather Station



Version: V2.20150416



3030247102-02-EN

Read and follow these operating instructions.

Keep these operating instructions in a safe place for later reference.

Company details

Document	Installation and operating instructions Product: Weather Station Document number: 3030247102-02-EN As of software version: 0.03.647 Original language: German
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1 For your safety

1.1 Basic safety instructions



Please read the following safety instructions carefully before using the product for the first time.

- Before installation, switch off the engine and the tractor's ignition.
- Do not drop the components on the floor because they can be damaged.
- The product does not include any user serviceable parts. Do not open the casing.
- Never clean the product with a high-pressure cleaner, as this will damage it.

1.2 Intended use

The product is intended to accurately display weather data on an ISOBUS terminal.

The product is intended exclusively for use in agriculture. The manufacturer shall not be held responsible for any other use of the system.



The manufacturer cannot be held liable for any personal injury or property damage resulting from such non-compliance. All risk arising from improper use lies with the user.

The operating instructions form part of the product. The product may only be used in accordance with these operating instructions.

All applicable accident prevention regulations and all other generally recognized safety, industrial, and medical standards as well as all road traffic laws must be observed. Any unauthorized modifications made to the equipment will void the manufacturer's warranty.

1.3 Layout and meaning of warnings

All safety instructions found in these Operating Instructions are composed in accordance with the following pattern:

	 WARNING
	<p>This signal word identifies medium-risk hazards, which could potentially cause death or serious physical injury, if not avoided.</p>

**CAUTION**

This signal word identifies low-risk hazards, which could potentially cause minor or moderate physical injury or damage to property, if not avoided.

NOTICE

This signal word identifies actions which could lead to operational malfunctions if performed incorrectly.

These actions require that you operate in a precise and cautious manner in order to produce optimum work results.

There are some actions that need to be performed in several steps. If there is a risk involved in carrying out any of these steps, a safety warning will appear in the instructions themselves.

Safety instructions always directly precede the step involving risk and can be identified by their bold font type and a signal word.

Example

1. **NOTICE!** This is a notice. It warns that there is a risk involved in the next step.
2. Step involving risk.

1.4**Disposal**

When it has reached the end of its service life, please dispose of this product as electronic scrap in accordance with all applicable waste management laws.

2 Product description

The Weather Station is a sensor, which can determine different weather data, and display it on an ISOBUS terminal.

If a Weather Station is connected to a terminal, the ISOBUS-TC application will save the determined weather data.

The Weather Station can determine the following values. All values can be displayed using the metric or imperial systems:

- Speed and direction of true wind
 - Actual wind speed and direction relative to North.
- Speed and direction of apparent wind
 - True wind together with slipstream. The latter is the wind felt by the machine user.

Example: When driving at speed of 20 km/h in an eastward direction, with a wind of 10 km/h from the west, apparent wind is 10 km/h from the East.


- Gust speed
 - A gust speed will be displayed if there is a brief increase in wind speed of more than 5 km/h above the average wind speed for the last 10 minutes.
- Temperature
- Relative air humidity
- Air pressure
 - With GPS reception: Air pressure is set to sea level.
 - Without GPS reception: Air pressure is set to the current position of the vehicle, i.e. the height of the terrain.
- Roll
 - Slope the vehicle along its longitudinal axis
- Pitch
 - Slope of the vehicle along its transverse axis
- Driving speed

3 Mounting and installation

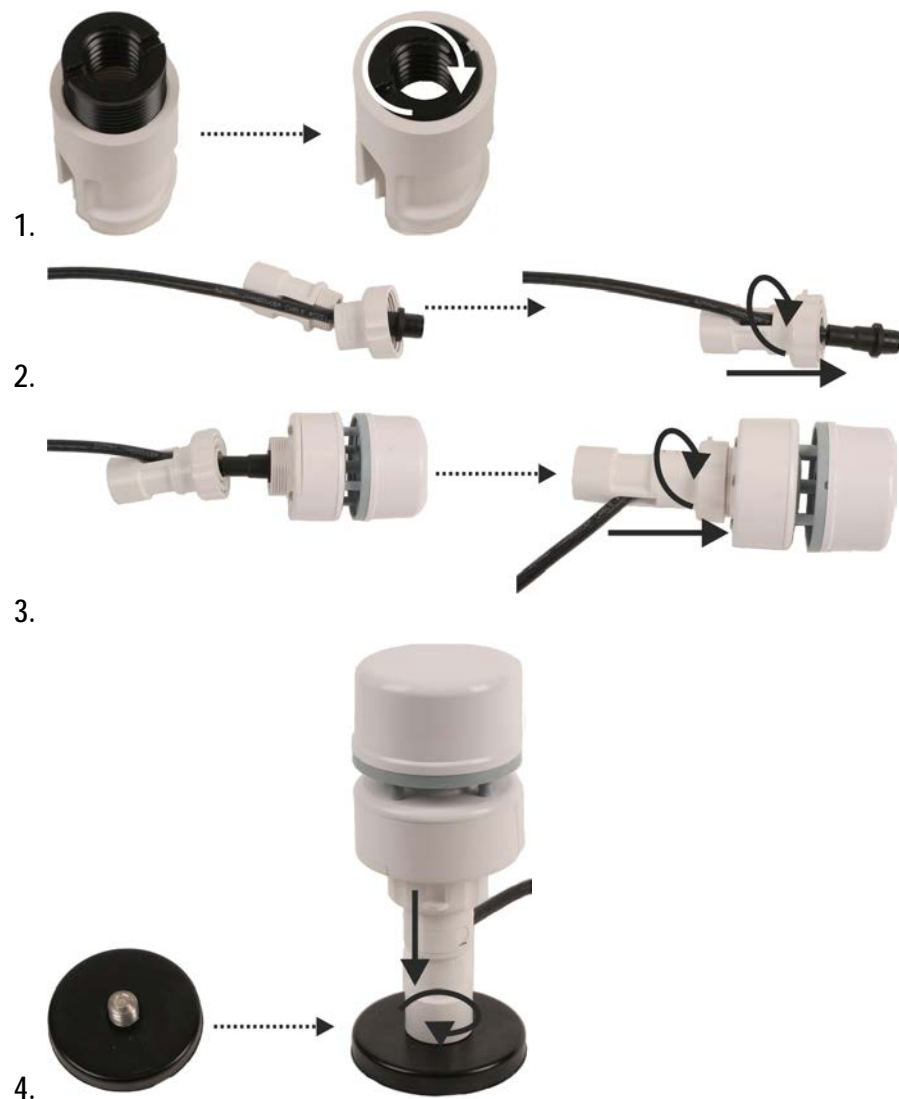
3.1 Installing the Weather Station

You can either install the Weather Station using its magnetic base, or screw it to the roof of your vehicle.

3.1.1 Installation with magnetic base

	<p>⚠ CAUTION</p> <p>Crushing hazard due to very powerful magnet The Weather Station has a very powerful magnetic base.</p> <ul style="list-style-type: none"> ◦ Never place your fingers between the Weather Station's magnetic base and a metal surface. ◦ Hold the Weather Station in your hands firmly, but do not place your fingers beneath the magnetic base.
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Procedure



5. Identify an appropriate position on the roof of the vehicle. This position must not be in the slipstream.
6. Use alcohol to clean the position on which will you want to mount the Weather Station.
7. Stick the provided 3M double-sided adhesive tape onto the clean surface.
8. Clean the provided metal plate.
9. Remove the protective paper from the 3M adhesive plate and bond the metal plate onto this.



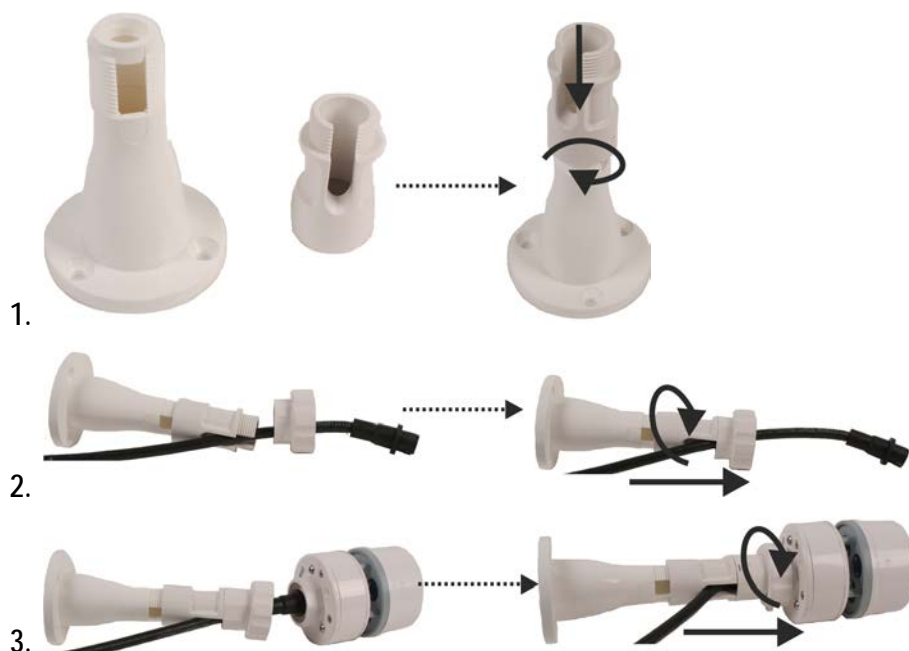
10. Place the magnetic base and Weather Station onto the metal plate. Ensure that the Weather Station is firmly secured. The recess **must** face the direction of travel.

⇒ You can now connect the Weather Station to a terminal.

3.1.2

Installation with screws

Procedure



4. Identify an appropriate position on the roof of the vehicle. This position must not be in the slipstream.


5. Use alcohol to clean the position on which will you want to mount the Weather Station.




6. Screw the Weather Station firmly onto the roof of the vehicle. Ensure that the Weather Station is firmly secured. The recess **must** face the direction of travel.
⇒ You can now connect the Weather Station to a terminal.

3.2

Connecting the Weather Station to a terminal

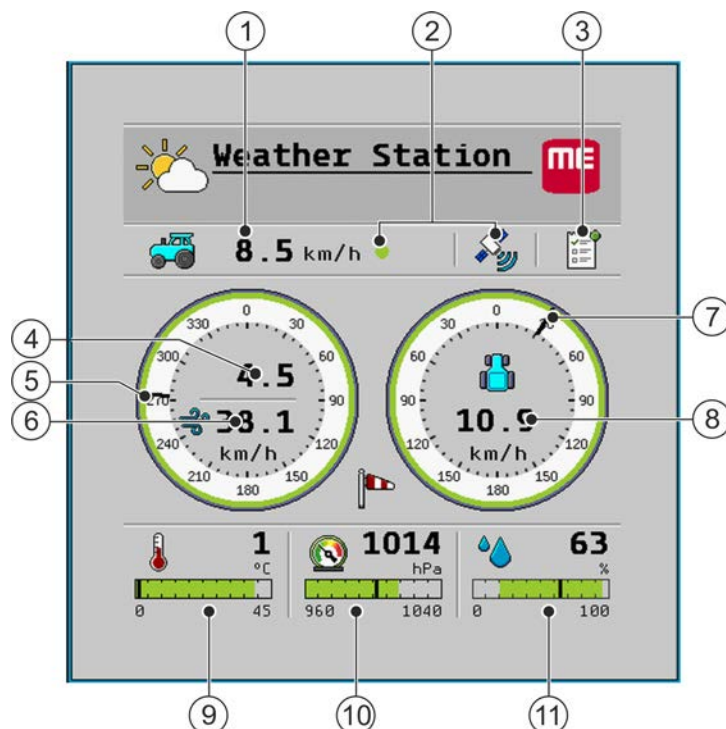
	<p>⚠ CAUTION</p>
	<p>Terminal connector supplying power Potential damage to the terminal from a short-circuit.</p> <ul style="list-style-type: none"> ◦ Switch the terminal off before plugging in or removing the connector.

Procedure

- ☒ You have now installed the Weather Station.
1. Switch off the terminal.
 2. Route the cable of the Weather Station into the vehicle cab.
 3. Connect to be cable from the Weather Station so the cable of the communication module.
 4. Connect connector A of the communication module to the CAN bus socket of the terminal. For the majority of terminals from Müller-Elektronik this is going to be the A socket.
⇒ The Weather Station is now connected between the basic vehicle harness and the terminal.

⇒ - You can now launch of the Weather Station application.

4 Layout of work screen

You can view directly all of the data determined by the Weather Station on the work screen:




①	Driving speed	⑦	Direction of apparent wind
②	GPS status	⑧	Speed of apparent wind
③	ISOBUS TC status	⑨	Temperature with permissible range
④	Speed of true wind	⑩	Air pressure with permissible range
⑤	Direction of true wind	⑪	Air humidity with permissible range
⑥	Gust speed (appears 10 minutes after switching on)		

For a number of values, you can see whether the weather data is within a permissible range. You can see the permissible range from the colour of the bar graphs or of the borders of the wind display:

- Green: Value is within permissible range.
- Red: Value is not within permissible range.
- Grey: Value could not be found.

You can configure the permissible range. [→ 12]

To display the slope of the vehicle and its current geographic position instead of weather data, on the work screen, press: 

5 Configuration

5.1 Calibrating the compass

After installation on any new vehicle, you must calibrate the Weather Station compass.

Procedure

1. On the work screen, press:



2. Select "Yes".



3. - Start the compass calibration.

4. Wait until the dot on the screen flashes yellow.

5. Drive the vehicle in a circle as large as possible, until the dot on the screen flashes green.

⇒ The compass calibration was successful.

6. Repeat the process if the dot flashes red.

5.2 Configuring the screen layout

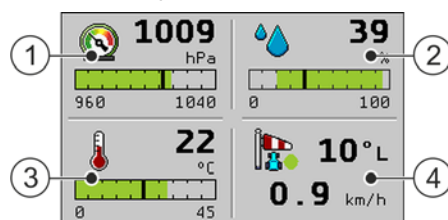
If you are using a Müller-Elektronik terminal, you can configure which weather data should be displayed in the header as well as in the additional window on the display screen.

Procedure

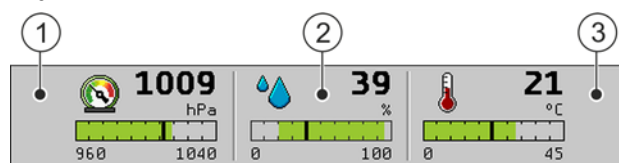
1. On the work screen, press:



2. Configure the screen layout. You can see which display corresponds to the different parts of the screen from the following illustrations.



Layouts in the additional window



Layouts in the header

5.3 Configuring alarms

You can set measurement values for different weather data for which an alarm is triggered. See the screen to see which alarms you can set. You can also set a permissible range. You can see the permissible range in the green area on the bar graphs on the work screen. [→ 10]

Procedure

1. On the work screen, press:



2. Configure the alarms.

5.4 Configuring the ISOBUS-TC save interval

The time set indicates the number of seconds after which the ISOBUS-TC application should record the determined weather data.

Procedure

1. On the work screen, press:



2. Configure the parameter

5.5 Configuring the filter

You can configure a filter for true and apparent wind.

The average wind speed within the time set is always displayed on the work screen. The shorter the time, the more accurate the values. Shorter times also mean that values will often fluctuate.

Procedure

1. On the work screen, press:



2. Configure the parameters.

6 Technical specifications

6.1 Retrieve sensor information

On the "**Information**" screen, you can retrieve various information on the Weather Station.

The following information is displayed:

Information	Meaning
Software version	Software version of the communication module
Sensor information	
Model ID	Model identification number for the Weather Station.
Software version	Software version of the Weather Station.
Model vers.	Model version of the Weather Station.
Serial no.	Weather Station serial number
Sensor self-test	Was the sensor's self-test successful?

Procedure

1. On the work screen, press:

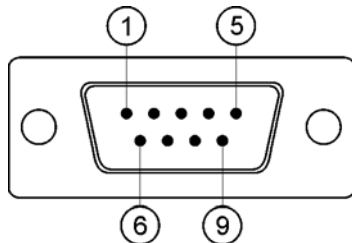


6.2 Technical data for Weather Station with communication module

Parameter	Value
Operating voltage	9-16 V
Temperature range	-20°C to +55°C
Power input	<2W
Protection class	IP X6

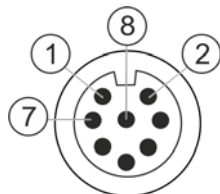
6.3 Connector pin assignment

6.3.1 9-pin Sub-D connector



Pin no.	Signal	Pin no.	Signal
1	CAN_L	6	GNDE
2	CAN_L IN	7	CAN_H IN
3	CAN_GND	8	CAN_EN OUT
4	CAN_H	9	+12VE
5	CAN_EN IN		

6.3.2 8-pin M12 plug



Pin no.	Signal	Pin no.	Signal
1	VDC	5	
2	GND	6	CAN_H
3		7	CAN_L
4		8	

7 Article overview

Item number	Item name
3030247102	Weather Station without communication module, with base harness and connector cable
3030247105	Weather Station with communication module, with base harness and connector cable
3030247101	Communication module